

What is claimed is:

1. A directed light source for efficient light emission, the light source
2 comprising:
a planar substrate having a top surface and an opposite bottom surface;
4 a light emitting device located on the top surface of the planar substrate;
a clear reflector having a back surface facing the top surface of the planar
6 substrate and a semi-cylindrical front surface, the reflector including a reflecting top
surface and an opposite and quadrilaterally symmetrical reflecting bottom surface, the
8 reflector causing light from the light emitting device to be directed out from the semi-
cylindrical front surface at a predefined angle.
2. The light source of claim 1 wherein the reflector is fabricated from plastic.
3. The light source of claim 1 wherein the light emitting device is a light
2 emitting diode (LED).
4. The light source of claim 1 further comprising a heat sink coupled to the
2 bottom surface of the planar substrate.

5. The light source of claim 1 further comprising a cylindrical toroidal lens
2 located on the semi-cylindrical front surface which collimates light substantially parallel
to the horizontal plane.

6. The light source of claim 1 wherein the top and bottom reflecting surfaces
2 are angled such to create total internal reflection from light from the light emitting
device.

7. The light source of claim 1 wherein the top and bottom reflecting surfaces
2 have a specular reflective layer.

8. The light source of claim 7 wherein the specular reflective layer is an
2 evaporated aluminum coating.

9. The light source of claim 7 wherein the specular reflective layer is a
2 sprayed chrome finish.

10. The light source of claim 7 wherein facets are formed on the top and
2 bottom reflective surfaces.

11. The light source of claim 1 wherein a lens is formed within the reflector to
2 focus beams from the light on the horizontal plane.

12. The light source of claim 1 wherein an aperture is installed over some part
2 of the semi-cylindrical front surface to restrict the angle of light emission.

13. A reflector for focusing light emitted from a light source in a generally
2 planar direction, the reflector comprising:
a semi-cylindrical front surface;
4 a back surface with an indentation which covers the light source;
a top reflecting surface divided into two quadrants;
6 a bottom reflecting surface divided into two quadrants, wherein the top quadrants
and bottom quadrants are symmetrical in shape and reflect light emitted from the light
8 source in a substantially horizontal plane.

14. The reflector of claim 13 further comprising a cylindrical toroidal lens on
2 the semi-cylindrical front surface, the cylindrical toroidal lens shaped to collimate light
emitted from the light source.

15. The reflector of claim 13 further comprising a lens formed between the
2 indentation and semi-cylindrical front surface, the lens focusing light emitted by the light
source in the substantially horizontal plane.

16. The reflector of claim 13 wherein the top and bottom reflecting surfaces
2 are angled such to create total internal reflection from light from the light emitting
device.

17. The reflector of claim 13 wherein the top and bottom reflecting surfaces
2 have a specular reflective layer.

18. The reflector of claim 17 wherein the specular reflective layer is an
2 evaporated aluminum coating.

19. The reflector of claim 17 wherein the specular reflective layer is chrome.

20. The reflector of claim 13 wherein facets are formed on the top and bottom
2 reflecting surfaces.

21. The reflector of claim 13 wherein an aperture covers part of the semi-
2 cylindrical front surface to restrict light emission to a specific angle.

22. A reflector for focusing light emitted from a light source in a generally
2 planar direction, the reflector comprising:
- 4 a curved front surface;
 - 4 a back surface in proximity to the light source;
 - 6 a top reflecting surface divided into two quadrants;
 - 6 a bottom reflecting surface divided into two quadrants, wherein the top quadrants
and bottom quadrants are symmetrical in shape and reflect light emitted from the light
8 source in a substantially horizontal plane out of the front surface.